

USSR

UDC 621.396.6-181.48

SAMOFALOV, K. G., BUZOVSKIY, O. V., KANEVSKIY, YU. S.

"Selecting the Case for a Number of Multicrystal Integrated Circuits"

Vestn. Kiev. politekhn. in-ta. Ser. avtomatiki i elektropriborostr. (Vestnik of the Kiev Polytechnic Institute. Automation and Electronic Device Construction Series), 1972, No 9, pp 125-127 (from RZh-Radiotekhnika, No 7, Jul 72, Abstract No 7V277)

Translation: A procedure is proposed for selecting the case for a series of multicrystal integrated circuits designed to construct the regular structural circuits of digital computers. There is 1 illustration and a 2-entry bibliography.

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USSR

UDC: 621.378.9:533.9.02

YAMANAKA, S., YAMANAKA, T., KANG, H., SASAKI, T., YOSHIDA, K.,
UEDA, K., HONGYO, M., WAKI, M., Electrical Engineering Depart-
ment, Osaka University, Institute of Plasma Physics, Nagoya Uni-
versity, Japan

"Plasma Generation and Heating by Lasers"

Moscow, Kvantovaya Elektronika, Sbornik Statey, No 2(8), 1972,
pp 45-52

Abstract: The paper gives the results of research on destruction
of laser glasses by powerful radiative emission, on using liquid
lasers as light amplifiers, and also on using powerful lasers
for heating a plasma. A method is proposed for high-speed mea-
surements of plasma temperature and density based on the Thomson
scattering of light. A complex structure is detected in the cen-
tral ion peak in the scattered radiation spectrum. The record-
ing equipment shows twenty neutrons occurring in a burst. [The
paper is an abbreviated version of an article presented to the
editors by the organizational committee of the International

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USSR

YAMANAKA, S. et al.; Kvantovaya Elektronika, Sbornik Statey,
No 2(8), 1972, pp 45-52

Conference on Laser-Produced Plasma held in Moscow in 1970.
Translation by V. A. Gribkov]. Six illustrations, bibliography
of ten titles.

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Acc. Nr:

AP0052077

Ref. Code: UR0475

PRIMARY SOURCE:

Vrachebnoye Delo

1970, Nr. 2

pp 181-184

STATE OF THE DIGESTIVE ORGANS IN WORKERS OF THE PHENOPLAST
AND AMINOPLAST PRESSPOWDER PRODUCTION

A. I. Kleyner, L. P. Rutshteyn, M. B. Poretskaya, S. S. Kangelari

Results indicate that persons working in the production of phenoplast and amino-
plast presspowders and articles made of them show a more frequent incidence of chronic
gastritis with preserved secretion, mainly functional disorders of external secretion of the
pancreas and liver.

Hygienic measures are suggested.

REEL/FAME

19820615

BIOLOGY

Biophysics

USSR

KANIN, Y.

"Prostheses 'Animated' With Biocurrents"

Baku, Baku, 6 Jan 71, p 3

Abstract: A large group of Soviet scientists and engineers were awarded the USSR State Prize 1970 for developing a forearm prosthesis controlled by biocurrents. The prosthesis has electrodes which pick up action potentials from arm muscles. These electrical impulses, magnified by a miniature amplifier built into the prosthesis, induce motion of the prosthetic fingers. The whole structure is properly shielded from external electrical noise. While the natural hand has 27 degrees of freedom, the new "animated" prosthesis has only one: flexion and extension of the fingers. Nevertheless, even with this limited motor activity, the biocurrent-controlled prosthesis has helped thousands of amputees to resume a more or less normal life. They can take care of themselves, write, drive a car, and operate various tools and instruments. While the industrial manufacture of these prostheses is increasing, progress is being made in developing forearm prostheses with rotating wrists, full-arm prostheses with flexible elbows, and leg prostheses that will enable the wearers to walk with a more natural gait.

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USSR

KANIN, YURIY

"Prosthetic Hand 'Animated' by Bioelectric Currents"

Moscow, Krasnaya Zvezda, 7 Jan 71, p 4

Abstract: A description is presented of a prosthetic hand which, when connected through the living fibers with the brain, forms of single system permitting an invalid with one or two artificial hands to open and close the fingers, handle a hammer, saw, or pencil, and even drive an automobile. The movements of the forearm and fingers of the prosthetic hand are controlled by the healthy muscles of the shoulders, to which highly sensitive electrodes are attached. Impulses from the brain are carried by bioelectric currents through the electrodes to an amplifier; the amplified impulses are then transmitted to a miniature motor located in the wrist. The entire apparatus is light in weight and can be used by women and children. Research to increase the maneuverability and sensitivity of artificial shoulders, elbows, wrists, and fingers is now being carried out at the Central Scientific Research Institute of Prosthetics and Prosthetic Design.

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KANIN, YURIY, Krasnaya Zvezda, 7 Jan 71, p 4

A prosthetic foot is also being designed which will enable its user to walk with a natural gait. The idea of utilizing bioelectric currents is gaining ever greater attention, and its applicability extends hypothetically to activities not connected with prostheses. Systems utilizing bioelectric currents for the operation of machines by thought impulses without the use of buttons or levers are suggested.

2/2

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1/2 009 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--THIAMINE AND ITS DERIVATIVES. VII. PRODUCTS OF THE CHLORINATION OF
3, ACETYPROPYL ACETATE AND FACTORS AFFECTING THEIR COMPOSITION -U-
AUTHOR--(02)-TURSIN, V.M., KANINA, T.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(2), 377-80

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY

TOPIC TAGS--CHLORINATED ORGANIC COMPOUND, KETONE, CHEMICAL SYNTHESIS,
VITAMIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1988/0122

STEP NO--UR/0080/70/043/002/0377/0380

CIRC ACCESSION NO--AP0105208

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0105208

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CHLORINATION OF 3, ACETYLPROPYL ACETATE (I) IN ANHYD. MEDIUM GAVE 3, CHLORO, 5, ACETOXY, 2, PENTANONE (II), WHICH WAS CHLORINATED TO 1, 3, DICHLORO, 5, ACETOXY, 2, PENTANONE (III). AT NEGATIVE15 TO NEGATIVE20DEGREES, THE YIELD OF I REACHED 76PERCENT. THROUGH 150 G I AT NEGATIVE15 TO NEGATIVE20DEGREES WAS PASSED CL AT A RATE TO MAINTAIN THE TEMP. BELOW NEGATIVE15DEGREES (IF A YELLOW GREEN COLOR APPEARED THE RATE OF CL WAS REDUCE OR TEMPORARILY STOPPED) TO GIVE 52 G II, B SUB1 82-4DEGREES, N PRIME20 SUBD 1.4490, D PRIME20 1.165, AND 26.2 G OF A MIXT. OF II AND III, B. 84-100DEGREES. FACILITY: VSES. NAUCH. ISSLED. VITAMIN. INST., MOSCOW, USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--THE SYNTHESIS OF THE OPTIMAL CONTROL SYSTEMS OF THE POWER AND THE
ENERGETIC PLANTS FOR SPACE VEHICLES USING NUCLEAR ENERGY -U-
AUTHOR-(05)-BODNER, V.A., BUGROVSKY, V.V., KANIOVSKY, S.S., MARTIOANOVA,
T.S., RYASANOV, J.A.
COUNTRY OF INFO--USSR, FRANCE
SOURCE--INTERNATIONAL FEDERATION OF AUTOMATIC CONTROL, SYMPOSIUM ON
AUTOMATIC CONTROL, 3RD, TOULOUSE, FRANCE, MAR. 2-6, 1970, PAPER. 33 P.
DATE PUBLISHED-----70
SUBJECT AREAS--SPACE TECHNOLOGY, NAVIGATION
TOPIC TAGS--AUTOMATIC CONTROL SYSTEM, SPACECRAFT NUCLEAR PROPULSION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/0005 STEP NO--FR/0000/70/000/000/0033/0033
CIRC ACCESSION NO--AT0117305
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--16DCT70

CIRC ACCESSION NO--AT0117305

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYSIS OF THE CHARACTERISTICS AND PRINCIPLES OF A COMPLEX, AUTOMATIC CONTROL SYSTEM USED FOR NUCLEAR PROPULSION OF SPACE VEHICLES. SPECIAL ATTENTION IS GIVEN TO A SINGLE, COMPLEX AUTOMATIC CONTROL SYSTEM WITH A VARIABLE STRUCTURE, USING OPERATIONAL REGIMES AND AN INBOARD DISCRETE CONTROL SETUP. AS AN EXAMPLE, THE REALIZATION OF A SYSTEM FOR STABILIZING THE OPERATIONAL REGIME OF A THERMIONIC GENERATOR IS PRESENTED.

UNCLASSIFIED

1/2 036 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ELECTROLYTIC METABOLISM IN ULCER DISEASE AND CHRONIC GASTRITIS -U-
AUTHOR--(02)--KANISHCHEV, P.A., VOLYNETS, YE.S.
COUNTRY OF INFO--USSR
SOURCE--VRACHEBNOYE DELO, 1970, NR 6, PP 67-70
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ELECTROLYTE, METABOLISM, BLOOD PLASMA, DIGESTIVE SYSTEM
DISEASE, SODIUM, POTASSIUM, DUODENUM, ADRENAL CORTEX

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1758 STEP NO--UR/0475/70/000/006/0067/0070
CIRC ACCESSION NO--AP0129126

UNCLASSIFIED

2/2 036

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129126

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT IS SUGGESTED THAT ELECTROLYTIC DISTURBANCES (INCREASE OF PLASMA POTASSIUM, CALCIUM, MAGNESIUM, CELLULAR SODIUM, SODIUM POTASSIUM RATIO, DECREASE OF PLASMA SODIUM AND CELLULAR POTASSIUM) IN 520 PATIENTS WITH DUODENAL ULCER AND CHRONIC GASTRITIS DURING EXACERBATION ARE CAUSED MAINLY BY MINERALCORTICOID ADRENAL CORTEX INSUFFICIENCY, WHICH WAS MORE PRONOUNCED IN THE ULCER PATIENT GROUP. IT IS CONCLUDED THAT DIFFERENT PATHOLOGICAL ENTITIES (ULCER DISEASE, CHRONIC GASTRITIS) MAY SIMILARLY EFFECT ELECTROLYTIC METABOLISM.
FACILITY: OTDEL ZABOLEVANIYA ZHELUDKA DNEPROPETROVSKOGO
NAUCHNO-ISSLEDOVATEL'SKOGO INSTITUTA GASTROENTEROLOGII.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--SIGNIFICANCE OF PYRILENE TEST IN ROENTGENODIAGNOSIS OF PEPTIC ULCER
-U-
AUTHOR-(03)-KANISCHEV, P.A., KUZNETSOV, V.G., GUYVIK, V.D.
COUNTRY OF INFO--USSR
SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 5, PP 29-30
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DIGESTIVE SYSTEM DISEASE, GANGLIONIC BLOCKING AGENT, DUODENUM,
LESION, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3001/0700 STEP NO--UR/0504/70/042/005/0029/0030

CIRC ACCESSION NO--AP0126412
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0126412

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN INTENSIFIED PERISTALSIS, INCREASED TONE OF THE STOMACH AND THE DUODENUM, ACCELERATED EVACUATION, SPASMS OF THE PYLORUS OR BULB DETECTION OF A NICHE IS NOT ALWAYS POSSIBLE. TO DECREASE THE TONE AND DECELERATION OF PERISTALSIS, AS WELL AS FOR RELIEVING SPASMS A GANGLION BLOCKING AGENT PYRILENE WAS SUED. AFTER ROUTINE STUDY AND DETECTION OF THE ABOVE MENTIONED SIGNS OF DYSFUNCTION OF THE STOMACH AND THE DUODENUM A PATIENT WAS GIVEN 2 TABLETS OF (10 MG) OF PYRILENE AND REPEATED INVESTIGATION WAS CONDUCTED 60-75 MINUTES LATER. AS A RESULT OF HYPOTENSIVE ACTION OF PYRILENE PATHOLOGICAL PROCESSES WERE REVEALED IN 35 OUT OF 145 ONLY AFTER THE USE OF PYRILENE. FACILITY: OTDEL ZABOLEVANIY ZHELUDKA DNEPROPETROVSKOGO N-1 INSTITUTA GASTROENTEROLOGII.

UNCLASSIFIED

USSR

UDC 621.38.61

SIDORIK, YE. P., and KANKO, M. I.

"Biochemiluminescence of Liver During the Effect of Radiation of a Neodymium Laser"

V sb. Ispol'z. optich. kvant. generatorov v sovrem. tekhn. i med. Ch.2-3 (Use of Lasers in Contemporary Technology and Medicine. Parts 2-3 -- Collection of Works), Leningrad, 1971, pp 84-85 (from RZh:Elektronika i yeye primeneniye, No 2, Feb 72, Abstract No 2A509)

Translation: A study of chemiluminescence of the cells of organs and tissues can give considerable information concerning the physiocochemical processes proceeding in the cells, and also the effect on these processes of various damaging factors. A study of super-weak luminescence of a liver homogenate was conducted on equipment based on the use of a photoelectric multiplier. The signal from the photoelectric multiplier was amplified by a UIS-2 wide-band amplifier and was recorded on a recording instrument in the form of a curve of the kinetics of chemiluminescence. Biochemiluminescence can reflect the degree of damage of tissues during the effect of laser radiation.

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USSR

UDC 621.396.96:621.396.69

KANONYKHIN, N. M. *R*

"Analog-to-Digital Device for Measuring the Range of Targets for Pulse-Phase Radar"

USSR Author's Certificate No 196119, Filed 5 Jul 65, Published 17 Feb 70
(from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9C44P)

Translation: This author's certificate introduces an analog-to-digital device for measuring the range of targets for pulse-phase radar. In this device the amplifier of the time discriminator is connected via a contactless switching circuit to a voltage-frequency type converter, and the output of the number-frequency type converter is connected to the input of a half-gate generator. These differences permit unique measurement of the target range in a broad variety of ranges with high accuracy and low ratios of useful signal intensity to noise. The measurement results are output in digital form. There is one illustration.

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USSR

UDC: 678.5.06:[539.2+620.173]

KANOVICH, M. Z., KOLTUNOV, M. A., and ROGINSKIY, S. L., All-Union Scientific-Research Institute of Glass Reinforced Plastics and Fiberglass; Moscow Institute of Electronic Machine Building

"Conditions for Producing High-Strength Orthogonally Strengthened Glass Reinforced Plastics With Good Compressive Strength Characteristics"

Riga, Mekhanika Polimerov, No 4, Jul-Aug 73, pp 655-660

Abstract: The authors study the conditions associated with the production of high compressive strength, orthogonally strengthened, glass reinforced plastics. Relationships are determined which relate the physico-chemical and geometric parameters of the composites into a system of inequalities. The satisfaction of this system ensures the production of a high-strength material with an assigned utilization factor. It is shown experimentally that these inequalities can be used as the first approximation for the optimal design of high compressive strength, orthogonally strengthened, composite materials.

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USSR

UIC 621.357.5:669.715
(088.8)

BUBYALIS, YU. S., BYARNOTAS, A. K., KANSHEPEDAS, Z. P., PAPIL'SKIS, I. M.,
and ESTULIN, I. YA., Institute for Chemistry and Chemical Technology, Academy
of Sciences, Latvian SSR

"Process for Preparing the Surface of Aluminum and Aluminum Alloys for the
Application of a Galvanized Coat"

Avt. sb. SSSR, kl. (USSR Authors' Certificate kl. [expansion unknown]) C 23 b
5/00, C 23 c 3/00, No 336375, applied 26/01/70, published 19/05/72 (from
Referativny Zhurnal -- Khimiya, No 7, 1973, Abstract No 7L356P)

Translation: A process is patented for the preparation of the surface of Al
and its alloys for galvanization by treating the surface in a solution contain-
ing the fluoroborates of zinc and ammonia followed by cathodic treatment in
the same solution. The process is distinguished in that nickel fluoroborate
is added to the solution, the formation of the Ni-Zn alloy on the surface of
the Al providing an increase in the durability of the adhesion of the subse-
quent galvanic film to the substrate. The reaction proceeds at a temperature
of 20-30°C and a current density of 0.5-1.5/decimeter² in a solution containing
the following (in g/l: Zn(BF₄), 40-80; Ni(BF₄)₂, 100-250; NH₄BF₄, 5-40. For
example, parts made of Al or one of its alloys are degreased in an organic
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BUBYALIS, YU. S., et al., Avt. sb. SSSR, kl (from Referativnyy Zhurnal -- Khimiya, No 7, 1973, Abstract No 7L356P)

solvent and then treated in a solution containing Na_2CO_3 (56 g/l) and Na [sic] (56 g/l) at 70°C for 5 minutes. Then the parts are treated in a 5% solution of NaOH at 20°C for 5 minutes. After washing in water the Al parts are treated for 30-60 seconds dilute (1:1) HNO_3 . For parts made of the Al alloy D-16, however, 30 g/l of NH_4F is added to the HNO_3 solution before treatment. The parts are washed again with water and treated for 10-60 seconds in a solution -- having pH 3.5-4.5 and a temperature of $20-30^\circ\text{C}$ -- containing the following: $\text{Zn}(\text{BF}_4)_2$, 40-80 g/l; $\text{Ni}(\text{BF}_4)_2$, 100-250 g/l; and NH_4BF_4 , 5-40 g/l. After this the parts are cathodically processed in this same solution for 10-30 seconds at a current density of 0.5-1.5 amps/decimeter² and transferred to a bath for the application of the galvanizing coat.

2/2

1/3 024 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--USE OF ISOENZYMES OF LACTATEDEHYDROGENASE SPECTRA IN THE SERUM IN
THE DIAGNOSIS OF DISEASES OF THE PANCREAS -U-
AUTHOR--(05)-CHAZOV, YE.I., SHIRNOV, V.N., TARSIS, G.B., LITVIN, G.O.,
KANSIN, N.N.
COUNTRY OF INFO--USSR

SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 4, PP 23-29

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--INTERNAL ORGAN DISEASE, PANCREAS, TUMOR, PACREATITIS, BLOOD
CHEMISTRY, LACTATE DEHYDROGENASE, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1990/0547

STEP NO--UR/0504/70/042/004/0023/0029

CIRC ACCESSION NO--AP0108763

UNCLASSIFIED

2/3 024

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0108763

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE PRESENTS THE RESULTS OF THE USE OF ISOENZYME SPECTRA OF LACTATE DEHYDROGENASE IN THE BLOOD SERUM FOR DIAGNOSIS OF DISEASES OF THE PANCREAS: HEMORRHAGIC PANCREONECROSIS, CHOLISTOPANCREATITIS, CANCER OF THE PANCREAS. THE AUTHORS USED AN ORIGINAL METHOD OF DIVISION OF ISOENZYMES OF LDG OF THE SERUM IN POLYACRYLAMIDE BLOCKS. DATA CONCERNING THE DYNAMIC CHANGES IN THE ENZYME SPECTRA OF LDG OF THE SERUM FOR PATIENTS WITH THE MENTIONED DISEASES WERE COMPARED WITH THE RESULTS OF DIASTASIS DETERMINATION IN THE SERUM. IT WAS FOUND THAT IN CASE OF HEMORRHAGIC PANCREATITIS A POSITIVE CORRELATION BETWEEN THE GROWTH OF LDG-3 AND LDG-4 CONTENT OF THE SERUM IN POLYACRYLAMIDE BLOCKS. DATA CONCERNING THE DYNAMIC CHANGES IN THE ENZYME SPECTRA OF LDG OF THE SERUM FOR PATIENTS WITH THE MENTIONED DISEASES WERE COMPARED WITH THE RESULTS OF DIASTASIS DETERMINATION IN THE SERUM. IT WAS FOUND THAT IN CASE OF HEMORRHAGIC PANCREATITIS A POSITIVE CORRELATION BETWEEN THE GROWTH OF LDG-3 EXPECTED. AND LDG-4 CONTENT OF THE SERUM AND HIGH FIGURES OF THE BLOOD DIASTASIS. SIMILAR RECONSTRUCTION OF THE ISOENZYME SPECTRUM OF LDG OF THE SERUM WAS NOTED IN THE MAJORITY OF PATIENTS WITH EXACERBATION OF GALLBLADDER CHOLECYSTITIS IN NORMAL FIGURES OF THE SERUM DIASTASIS. CONSERVATIVE TREATMENT OF PATIENTS WITH CHOLECYSTOPANCREATITIS AND CHOLYCYSTITIS MAY BRING ABOUT A CHANGE IN THE INITIAL PICTURE OF THE ISOENZYME SPECTRUM. IN CASE OF CANCER OF THE PANCREAS CHANGES IN THE ISOENZYME SPECTRUM OF THE SERUM LDG WERE NOT OBSERVED.

UNCLASSIFIED

3/3 024

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0108763

ABSTRACT/EXTRACT--IT WAS FOUND THAT DETERMINATION OF THE ISOENZYME SPECTRA OF THE SERUM LDG ALLOWS A DIFFERENTIAL DIAGNOSIS OF MYOCARDIAL INFARCTION AND AN ATTACK OF ACUTE PANCREATITIS TO BE MADE. THE AUTHORS ASSUME THAT THE CHANGES IN THE ISOENZYME SPECTRUM OF THE SERUM LDG OBSERVED IN PANCREATITIS AND CHOLECYSTOPANCREATITIS ARE PECULIAR NOT ONLY TO THE DISEASE OF THE PANCREAS. AT THE SAME TIME THE METHOD IS VERY USEFUL IN DIAGNOSIS OF THESE DISEASES AND CAN BE USED FOR THE ASSESSMENT OF THE EFFICACY OF THE THERAPY USED. FACILITY: TSENTRAL'NAYA N-I LABORATORIYA 4-GO GLAVNOGO UPRAVLENIIYA PRI MINISTERSTVE ZDRAVOOKHRANENIYA SSSR, MOSCOW.

UNCLASSIFIED

USSR

UDC: 8.74

KANTARIYA, G. V.

"Optimum Selection With Matching of Alternative Hypotheses"

Soobshch. AN GruzSSR, 1972, 68, No 3, pp 553-555 (from RZh-Kibernetika, No 5, May 73, abstract No 5V847 by the author)

Translation: The paper deals with the problem of finding the extremum element of a set of objects under conditions of assignment of different functions of arithmetization and metrization of this set in the form of a system of alternative hypotheses. The paper proposes a procedure for shortening the sorting of a set of objects, and a certain function is introduced which defines the measure of agreement of hypotheses and indicates the element which is optimum in the sense of closeness to the extremum element from the standpoint of maximum matching between all hypotheses.

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USSR

K
UDC 681.325

KANTAROVSKIY, A. A., KARTAVYY, V. V., MILKIS, G. YA., Lugansk
Affiliate of the State Planning, Design, and Scientific Research
Institute "Giprougleavtomatizatsiya"

"A Converter Which Changes Digital Code to a Time Interval"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye
Znaki, No 12, 1970, Author's Certificate No 267207, filed 18 Nov
68, p 124

Abstract: This Author's Certificate introduces a converter which
changes digital code to a time interval. The device contains a
decoder, two-cycle magnetic choke logic elements, and diodes. As
a distinguishing feature of the patent, the device is simplified
by interconnecting the decoder outputs through diodes and connect-
ing these same decoder outputs to the inputs of logic elements
which perform the operation of logical multiplication. The out-
puts of these logic elements are connected through diodes to the
input of a logic element which performs the operation of logical
negation.

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USSR

K UDC 681.325

KANTAROVSKIY, A. A., KARTAVYY, V. V., MILKIS, G. YA., Lugansk
Affiliate of the State Planning, Design, and Scientific Research
Institute "Giprougleavtomatizatsiya"

"A Converter Which Changes Digital Code to a Time Interval"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye
Znaki, No 12, 1970, Author's Certificate No 267207, filed 18 Nov
68, p 124

Abstract: This Author's Certificate introduces a converter which
changes digital code to a time interval. The device contains a
decoder, two-cycle magnetic choke logic elements, and diodes. As
a distinguishing feature of the patent, the device is simplified
by interconnecting the decoder outputs through diodes and connect-
ing these same decoder outputs to the inputs of logic elements
which perform the operation of logical multiplication. The out-
puts of these logic elements are connected through diodes to the
input of a logic element which performs the operation of logical
negation.

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USSR

UDC 621.165-762.001.45

FRISCHENKO, I. K., Academician of the Academy of Sciences Ukrainian SSR;
KOSYAK, YU. P., LEZARENKO, A. V., KOPCHENKO, V. N., Candidates of Technical
Sciences; KONTSEB, A. M., and USOL'NIKOVA, L. A., Engineers

"Full-Scale Tests of Bronze-Graphite Powder Metallurgy Sealing Materials in
PVK-150 Turbine"

Leningrad, Energiya i Elektromekhanika, No 12, Dec 71, pp 27-29

Abstract: In high and intermediate-pressure cylinders designed by the
Koslovskiy Institute for the 11, 11.5 and 12.5 million clearance over the working blades is
provided by sealing strips in the stator. Certain heat-resistant materials
should not be used for the strips, e.g. nickel, German silver, Kh18N9Ti steel.
New testing data are given with the strips made in conjunction with the
chromium. Kh18N9Ti and Kh18N9Ti used only cast materials, chiefly iron
alloyed with Cr, Ni, Mn. Full-scale tests of the nickel-graphite sealing
material U-3-1 in 11.5, 11.5 and 12.5 million clearance showed that this nickel-
bronze alloy is not suitable for high-pressure turbines because of inter-
crystalline corrosion. Copper-bronze materials have proved more promising in
this respect.

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PENKOVICH, I. N., et al., *Engegashinostroyeniye*, No 12, Dec 71, pp 27-29

Full-scale tests were made of bronze-graphite materials in the PVK-150 turbine at the Leningradskaya State Regional Electric Power Station. The experimental results show that the use of iron and manganese as the principal alloying elements, as well as graphite as an anti-friction addition. The results indicate satisfactory performance for 10,500 hours. The best materials are brands 43, 53 and 71, which should be used for sealing inserts for high-pressure turbines. The graphite content of the sealing materials should not exceed 3% (by weight). The average clearance was found to increase from 0-0.3 mm in the initial state to 0.3-0.9 mm after the tests. Adequacy of the seal unit requires nonconformity initial clearance. The condition of the rotor strips is satisfactory. The use of bronze-graphite sealing materials can be recommended after check tests in a K-150-640 type turbine.

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1/2 030 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--PROPERTIES OF HIGH CHROMIUM WEAR RESISTANT CAST IRONS -U-
AUTHOR--(02)--KANTENIK, S.K., RABINKIY, R.YA. K
COUNTRY OF INFO--USSR
SOURCE--LITEINOE PROIZVOD. 1970, (1), 33-4
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--CAST IRON, IMPACT STRENGTH, TENSILE STRENGTH, HARDNESS, WEAR
RESISTANT METAL, CHROMIUM ALLOY/(U)ICKKH16MT CAST IRON, (U)ICKKH28N2
CAST IRON, (U)ICKKH15MZ CAST IKON
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3004/1927 STEP NO--UR/0128/70/000/001/0033/0034
CIRC ACCESSION NO--AP0132189
UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132189

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THREE KINDS OF WEAR RESISTANT CAST IRONS: ICHKH28N SUB2, ICHKH15MZ, AND ICHKH16MT (C 2.7-3.0, 3.0-4.0, 2.8-3.1, SI 0.7-1.4, MUCH LESS THAN 1.0, MUCH LESS THAN 1.0; MN 0.5-0.8, 0.5-0.9, MUCH LESS THAN 1.0; CR 28-30, 12-18, 15-17; NI 1.5-3.0, MINUS, MINUS; MO MINUS, 2.0-4.0, 1.0-1.5; AND TI MINUS, MINUS, 0.5-1.0 WT. PERCENT) WERE MELTED IN A BASIC FURNACE, DEOXIDIZED WITH FE-MN, AND IN CASE OF THE CAST IRON ICHKH16MT ALLOYED WITH TI. AFTERWARDS THE FLUIDITY SHRINKAGE, (LINEAR AND VOL.), BENDING AND IMPACT STRENGTHS, AND HARDNESS WERE DETD. THE LEAST SHRINKAGE AND BEST COMBINATION OF MECH. PROPERTIES AND ECONOMICAL ADVANTAGES HAD THE CAST IRON ICHKH16MT. THE CAST IRON ICHKH28N2 WAS LESS RESISTANT, WHILE THE CAST IRON ICHKH15MZ WAS LESS ECONOMICAL. TENSILE STRENGTH WAS (IN THE SAME ORDER AS ABOVE) 40.7, 42.9, 39.6; KG PER MM PRIME2. IMPACT STRENGTH WAS 0.44, 0.44, 0.43 KG-M PER CM PRIME2. HARDNESS WAS 555, 588, 600 HB KG PER MM PRIME2.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--TREATMENT OF MALLEABLE CAST IRON WITH CARBON DIOXIDE -U-
AUTHOR--(02)-KANTENIK, S.K., YEMELYANOV, S.YE. K
COUNTRY OF INFO--USSR
SOURCE--LITEINOE PROIZVOD. 1970, (1), 42
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--CAST IRON, CARBON DIOXIDE, NONMETALLIC INCLUSION,
GRAPHITIZATION, MECHANICAL PROPERTY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1995/1388 STEP NO--UR/0128/70/000/001/0042/0042
CIRC ACCESSION NO--AP0116837
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0116837

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CO SUB2 WAS INJECTED INTO MALLEABLE CAST IRON (C 2.45-2.50, SI 1.18-1.24, MN 0.43-0.45, S 0.09-0.12, P 0.06, AND CR 0.07 WT.PERCENT) AT 1500DEGREES WHILE IN A 1.5-KG MGO CRUCIBLE. PRODUCED INGOTS WERE SUBJECTED TO 2 STAGE GRAPHITIZING ANNEALING FOR 12-15 HR. THIS TREATMENT RESULTED IN A DECREASE OF O AND H CONCN. TO ONE HALF AND THAT OF N TO TWO FIFTHS, WHILE THE O. OF CAST IRON INCREASED 7.30-7.40 G-CM PRIME3. ALSO, THE AMT. OF NONMETALLIC INCLUSIONS WAS REDUCED, AND COMPONENTS WERE MORE EVENLY DISTRIBUTED. ALL MECH. PROPERTIES BECAME SIGNIFICANTLY BETTER, AND THE STRUCTURE CHANGED FROM COARSELY GRAINED PEARLITIC WITH FLOCCULAR GRAPHITE INCLUSIONS INTO FINELY DISPERSED FERRITIC WITH COMPACT GRAPHITE INCLUSIONS. THE GRAPHITIZATION ANNEALING CYCLE WAS SHORTENED FROM 28-30 TO 12-15 HR.

UNCLASSIFIED

USSR

UDC: 620.179.15

YAKOBSON, A. M., LECNOV, B. I., KANTER, B. M., and KOPELIOVICH,
M. Kh.

"Comparative Experimental Estimate of Various Visual X-Ray Intro-
scopic Systems Using Electronic Devices"

Sverdlovsk, Defektoskopiya, No. 4, 1970, pp 137-139

Abstract: The authors of this brief communication, members of the Scientific Research Institute of Introscopy, discuss the laboratory model of the RIUS UM-92 Introscope, and offer indices by which this instrument can be compared with the RTI, an x-ray television introscope with a monocrystalline screen, described in an earlier article by the first-named author in collaboration with E. M. Dzbgalyan (Zavodskaya laboratoriya, 1962, No. 5). The RIUS UM-92 described in the present article is also an x-ray introscope with a monocrystalline screen, and uses an electron-optical light amplifier of the UM-92 type. A simple diagram of the instrument given in this article shows that the radiation from an x-ray source is projected through the specimen under examination onto the monocrystalline screen, the x-rayed image being converted to a light image by the screen and then put through the light amplifier and a telescope to the observer's eye. A third instrument containing
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1/2 012 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--PLATINUM (IV) DIAMMINE DICHLORO COMPLEX CONVERSIONS IN SOLUTIONS
-U-
AUTHOR--(03)--ZHELIGOVSKAYA, N.N., BREUSOVA, YU.G., KANTER, T.M.
COUNTRY OF INFO--USSR
SOURCE--VESTN. MOSK. UNIV., KHIM. 1970, 11(1), 32-7
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PLATINUM, AMMONIA, HYDROLYSIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1987/1096 STEP NO--UR/0189/70/011/001/0032/0037
CIRC ACCESSION NO--AP0104494
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0104494

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ACID DISSOCN. CONSTS. OF (PTCL SUB3(H SUB2 O) (NH SUB3)SUB2) PRIME POSITIVE AND (PT(OH)CL SUB2(H SUB2 O)(NH SUB3)SUB2) PRIME POSITIVE ARE DETD. THE COMPLEXES ARE FORMED AS A RESULT OF HYDROLYSIS OF (PTCL SUB3(NO SUB2)(NH SUB3)SUB2), (PTCL SUB4(NH SUB3)SUB2), (PT(OH)CL SUB3 (NH SUB3)SUB2), AND (PT(OH)CL SUB2(NO SUB3) (NH SUB3)SUB2). HYDROLYSIS CONSTS. FOR THE 4 COMPDs. ARE 2.04 TIMES 10 PRIME NEGATIVE6, 5.68 TIMES 10 PRIME NEGATIVE5, 9.47 TIMES 10 PRIME NEGATIVE7 AND 1.39 TIMES 10 PRIME NEGATIVE6, RESP. AT 25DEGREES.

UNCLASSIFIED

Therapy

UDC 616.988.25-002.395.42-085.355:577.155.2

USSR

TROP, I. YE., KANTER, V. M., KAZANTSEVA, S. I., ALEKSANDROV, V. I., POSTNOVA, L. S., and NIKOLAYEVA, S. P., Khabarovsk Scientific Research Institute of Epidemiology and Microbiology Clinic of Nerve Diseases of the Khabarovsk Medical Institute, Khabarovskiy Kray Hospital, Khabarovsk City Hospital No 3, and City Hospital No 7, Komsomol'sk-on-Amur

"The Use of Ribonuclease in the Treatment of Patients With Tickborne Encephalitis"

Moscow, Sovetskaya Meditsina, No 3, Mar 71, pp 104-107

Abstract: The beneficial effect of RNA-ase in the treatment of tickborne encephalitis has been established at foci of this disease in Western Siberia. In this instance, clinical studies pertaining to treatment with RNA-ase were conducted on 79 cases that originated in the Far East, where the disease occurs in a much more severe form. RNA-ase was administered to the patients intramuscularly, intravenously, or in the endolumbar region in doses of 300-500 mg per day and 3-5 g per course of treatment. The treatment was carried out in the majority of cases in combination with serum therapy that consisted of administration of titrated human placental or fetal gamma-globulin. Comparison of the results obtained with those for a control group of patients treated with gamma-globulin only showed that application of RNA-ase in addi-

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TROP, I. YE., et al., Sovetskaya Meditsina, Vol 34, No 3, Mar 71, pp 104-107

tion to gamma-globulin shortened the length of the fever period, led to a more rapid disappearance of meningeal symptoms, accelerated return of the cerebrospinal fluid to a normal state, and had the effect of bringing about a considerably more favorable outcome of the disease. While treatment with RNA-ase was effective in focal forms of encephalitis, reducing the mortality (8 deaths among 42 patients vs. 13 among 26 in the control group) and the number of cases in which paralysis developed, it was ineffective in two cases of the polyencephalomyelitic form of the disease..

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USSR

UDC 547.821.792'759.32:542.97

YAKHONTOV, L. N., SUVOROV, N. N., KANTEROV, V. YA., PODKHALUZINA, N. YA., PRONINA, YE. V., STAROSTENKO, N. YE., and SHKIL'KOVA, V. N., All-Union Research Institute of Chemical Pharmaceutics imeni S. Ordzhonikidze, and the Moscow Institute of Chemical Engineering imeni D. I. Mendeleev

"The Heterogenous Fischer Catalytic Reaction. IV. Catalytic Synthesis of 7-Azaindole and 2-Methyl-7-azaindole in the Presence of γ - Al_2O_3 "

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 5, 1972, pp 656-658

Abstract: This is the first report of the synthesis of 7-azaindole (I) and 2-methyl-7-azaindole (II) by cyclization, respectively, of acetaldehyde pyridyl-2-hydrazone (III) or acetone pyridyl-2-hydrazone (IV) over γ - Al_2O_3 or δ - Al_2O_3 (2.6% F) at high temperatures. Both reactions, in addition to I or II, also yielded 2-amidopyridine and 3-methyl-5-triazolo[3,4-a]-pyridine. Prior to the experiments the catalysts were activated by exposure to a flow of dry air for 6 hr. at 600°C for γ - Al_2O_3 and at 500°C for δ - Al_2O_3 (2.6% F); III and IV were purified by recrystallization from hexane. For the reaction, 7% benzene solutions of III or IV were passed over one or the other of the catalysts at temperatures ranging from 250° to 500°C. The products of the reaction were separated 1/2

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YAKHONTOV, L. N., Khimiya Geterotsiklicheskikh Soyedineniy, No 5, 1972, pp 656-658

either by partition chromatography on an aluminum oxide column or, in the case of I, by gas-liquid chromatography. Evaluation of the results showed that the fluorinated catalyst functioned more efficiently; with this catalyst the maximum yield of I was obtained at 420°C and amounted to 15%, while that of II approached 50% at 315°C.

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FROM: FBIS, Foreign Press Digest, Cybernetics in the USSR, 28 Jan 70, FPD 0006
21. USSR

UDC 621.001.24

FILIPPOV, A. P., KANTOR, E. Ya.

"Some Methods of Solving Mechanics' Problems in Connection with Automation of Machine-Building Calculations"

Avtomatizatsiya Umstvennogo Truda v Mashinostroyenii, Moscow, "Nauka" Publishing House, 1969, pp 111-125

Abstract: This article contains a brief review of the reports of the scientific and technical conference "Modern Calculation Techniques in Machine-Building using a Computer" (Khar'kov, January 1966) and a series of nontraditional means of solving problems in mechanics developed at the Khar'kov branch of the Mechanics Institute of the Ukrainian SSR Academy of Sciences.

There is a discussion of the heuristic method of step adaptation when finding the extrema of functions of many variables of the ravine techniques, which permits cutting the expenditure of machine time almost in half as a result of automation of control of step size.

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The application of graph theory in finding optimal layouts and parameters for powerful steam turbines is described.

The advantages and broad possibilities of variation equations of the mixed type when solving problems of the theory of inhomogeneous flexible elastic-plastic shells and also integral equations from calculating dynamic processes are established.

Some procedures are presented for automation of construction of equation solving systems on digital computers.

The purpose of the article is to demonstrate the importance of reevaluating the known calculation techniques under the conditions of broad application of modern computer equipment. The article contains two tables, two illustrations and a bibliography of five entries.

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UKRAINIAN SSR

UDC 539.3

KANTOR, B. Ya., Khar'kov Branch, Institute of Mechanics, Academy of Sciences of the Ukrainian SSR

"On a Technical Theory of Non-linearly Elastic Non-uniform Flexible Membranes"

Kiev, Prikladnaya Mekhanika, Volume 6, No 3, March 70, pp 32-37

Abstract: This article is a continuation and generalization of material previously presented by the same author in Volume 1, No 12 of this journal for 1965, and in a collection of articles, Dinamika i Prochnost' Mashin, 5th Edition, Press of the Khar'kov State University, 1967. The fundamental relationships used are taken from these works.

On this basis, a variation equation is developed in terms of the normal component of displacement and the stress function for thin isotropic membranes with different physical properties in different parts of the membrane. This equation is in terms of two functions, representing the stress and deflection of each point on the membrane. These are subject to geometric and static boundary conditions. In turn, the functions which satisfy the variation equation and the boundary conditions can be considered the solution of a system of two differential equations for the equilibrium and consistency of deformation.

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UKRAINIAN SSR

KANTOR, B. Ya., Kiev, Prikladnaya Mekhanika, Volume 6, No 3, March 70, pp 32-37

tion. If the modulus of elasticity and the coefficient of transverse compression are even functions of the vertical coordinate, the variation equation simplifies to that for a linearly elastic non-uniform material, symmetrical with respect to the center of the membrane. If they are even functions of invariants on the tensor of deformation, a simplified equation holds for a non-linearly elastic material with the same structure, deformed symmetrically or antisymmetrically around the center. If the membrane is of linearly elastic non-uniform material, these factors are independent of the deformed state.

The required system of differential equations can be found from the variation equations, considering the arbitrary nature of the variation. These procedures can also be used to find the natural boundary conditions.

Considering that the coefficients of the equations are functions of the coordinates, the method of Ritz can be used to generate a system of quadratic equations which can be solved by the Newton-Kantorovich method to calculate the deformations, the invariants of the tensor of deformation, and the values of the modulus of elasticity and the coefficient of transverse compression.

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KANTOR, B. Ya, Kiev, Prikladnaya Mekhanika, Volume 6, No 3, March 70, pp 32-37

Based on the method described, a program has been developed for the Ural-2 computer to perform such a calculation.

There are nine references, all to Soviet sources.

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1/2 016 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ENGINEERING THEORY OF NONLINEARLY ELASTIC INHOMOGENEOUS FLEXIBLE
SHELLS -U-
AUTHOR--KANTOR, B.YA. *K*
COUNTRY OF INFO--USSR
SOURCE--PRIKLADNAIA MEKhanika, VOL. 6, MAR. 1970, P. 32-37
DATE PUBLISHED----MAR70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, PHYSICS
TOPIC TAGS--SHELL THEORY, NONLINEAR SHELL STRUCTURE, THIN SHELL STRUCTURE,
ISOTROPIC PROPERTY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAme--1995/0858 STEP NO--UR/0198/70/006/000/0032/0037
CIRC ACCESSION NO--AP0116368
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0116368

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXTENSION OF KANTOR'S (1965, 1967) GEOMETRICALLY NONLINEAR THEORY TO INCLUDE SHELLS MADE FROM PHYSICALLY NONLINEAR INHOMOGENEOUS MATERIALS. A VARIATIONAL EQUATION, IN TERMS OF THE NORMAL DISPLACEMENT COMPONENT AND STRESS FUNCTION, IS DERIVED FOR THIN ISOTROPIC SHELLS MADE FROM A MATERIAL WHOSE PHYSICAL PARAMETERS ARE COMPLEX FUNCTIONS OF THREE COORDINATES. A SYSTEM OF EQUILIBRIUM AND STRAIN COMPATIBILITY EQUATIONS IS OBTAINED, TOGETHER WITH THE BOUNDARY CONDITIONS. SEVERAL VERSIONS OF A SHELL THEORY FOR MATERIALS WITH CHARACTERISTICS SYMMETRICAL WITH RESPECT TO THE MIDDLE SURFACE ARE EXAMINED. FACILITY: AKADEMIIA NAUK UKRAINSKOI SSR, INSTITUT MEKHANIKI, KHARKOV, UKRAINIAN SSR.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--REPRODUCTION OF BASIC FUNDS IN THE USSR -U-
AUTHOR--(04)-ARAKELIAN, A.A., VOROTILOV, V.A., KANON, L.M., PAVLOV, P.M.
COUNTRY OF INFO--USSR
SOURCE--REPRODUCTION OF BASIC FUNDS IN THE USSR (VOSPRAIZVEDSTVO OSNOVNYKH
FUNDOV V SSSR) MOSCOW, MYSL', 1970, 484 PP
DATE PUBLISHED--70
SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES
TOPIC TAGS--INDUSTRIAL MANAGEMENT, FINANCE, ECONOMIC SYSTEM CAPITAL
INVESTMENT, INDUSTRIAL DEVELOPMENT, S AND T DEVELOPMENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/0051 STEP NO--UR/0000/70/000/000/0001/0484
CIRC ACCESSION NO--AM0123832
UNCLASSIFIED

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PROCESSING DATE--110EC70

CIRC ACCESSION NO--AM0123832

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: CHAPTER I ECONOMIC NATURE OF BASIC INDUSTRIAL FUNDS 3. II STRUCTURE OF BASIC FUNDS 43. III BRANCH STRUCTURE OF BASIC FUNDS 58. IV INDICES OF UTILIZATION OF BASIC FUNDS AND PREREQUISITES FOR THEIR HIGH EFFECTIVENESS 74. V INCREASE OF THE ACTIVE PERIOD OF BASIC FUNDS 107. VI IMPROVEMENT OF UTILIZATION OF BASIC FUNDS PER UNIT OF TIME 132. VII ECONOMIC REFORM AND IMPROVEMENT OF UTILIZATION OF BASIC FUNDS 161. VIII DEPLETION OF BASIC FUNDS 181. IX SERVICES OF BASIC FUNDS 201. X DEPRECIATION OF BASIC FUNDS 220. XI ACCUMULATION OF BASIC FUNDS AS A FACTOR OF HIGH RATES OF DEVELOPMENT OF THE NATIONAL ECONOMY 231. XII CAPITAL INVESTMENTS AND PROPORTIONS OF REPRODUCTION OF BASIC FUNDS 308. XIII CAPITAL CONSTRUCTION AND REPRODUCTION OF BASIC FUNDS 358. XIV INNOVATION OF BASIC FUNDS BASED ON THE TECHNOLOGICAL PROGRESS 396. XV BALANCE OF BASIC INDUSTRIAL FUNDS 446. THE MONOGRAPH DEALS WITH MAJOR PROBLEMS IN REPRODUCTION OF BASIC INDUSTRIAL FUNDS OF SOCIALIST NATIONAL ECONOMY.

UNCLASSIFIED

Communications

USSR

UDC 621.397.742

TALYZIN, N. V., BYKOV, V. L., KANTOR, L. Ya.

"A Method of Radio Communication and Television Transmission Using Artificial Earth Satellites"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 15, May 71, Author's Certificate No 302840, Division H, filed 7 Apr 69, published 28 Apr 71, p 204

Translation: This Author's Certificate introduces a method for radio communications and television transmission using artificial Earth satellites operating in a common band of frequencies with spatial frequency division of signals. As a distinguishing feature of the patent, the effectiveness of using a stationary orbit is improved by relaying television signals through devices on board the satellite which have maximum emission power, and relaying communications signals through devices on board the satellite which radiate optimum power in the economic sense. Television signals are received by antennas which have the minimum diameter for the selected power, and communications signals are received by antennas with economically optimum dimensions.

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USSR

UDC: 621.391:519.2

KANTOR, L. Ya. and VOLKOV, V. N.

"Computing the Noise Immunity of Servo FM Signal Demodulators in the Threshold Region"

Tr. NII radio (Transactions of the Scientific Research Institute of Radio) 1970, No. 1, pp 5-11 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3A53)

Translation: A method is proposed for computing the noise immunity of servo FM signal demodulators in the threshold region, based on the threshold pulse model. The method is distinguished by its simplicity and the correspondence between the model used and the physical processes of servo demodulators. A good agreement between the computed and experimental characteristics is found.

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USSR

UDC 629.195.2:621.39

TALYZIN, N. V.; KANTOR, L. YA. and PAYANSKIY, YU. M.

"Economic Aspects of Increasing the Capacity of a Satellite Communication System"

Moscow, Radiotekhnika, Vol 25, No 1, Jan 70, pp 3-8

Abstract: The article deals with the economic factors of the satellite communication system and their relation to system capacity. Its purpose is to determine the dependence of the system optimal parameters and efficiency on system capacity. Various ways for increasing the system capacity are considered and their efficiency and performance are analyzed. The way of increasing the system capacity by increasing the number of high-frequency "cores" is retained for the analysis. The optimum number of "cores" is determined by the frequency deviation on the channel from an equation. At a given repeater and HF core capacity this equation makes it possible to establish the necessary frequency deviation and to determine the outlay for a satellite communication system, as a function of the onboard transmitter power and system capacity. Calculations of the optimal system parameters at variable system capacity was carried out, according to the algorithm presented previously by

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TALYZIN, N. V., et al., Radiotekhnika, Vol 25, No 1, Jan 70, pp 3-8

the authors, under the assumption, that every ground station is provided with one full-turn antenna and that the redistribution of channels between the ground stations is neglected. An analysis of the results shows that: 1. Outlays for one telephone channel decreases with increasing system capacity. 2. The system capacity increase leads to the reduction of optimal power of the onboard transmitter, and to an increase in the optimal antenna diameter at ground station. 3. The increase in system capacity has a small effect on its relative efficiency i.e. the average distance between the stations of an equivalent (with respect to outlays and capacity) ground station. This distance depends on the number of ground stations.

USSR

UDC: 621.372.061

KANTOR, I. Ya.

"On the Physics of Phenomena in the Threshold Region of Follow-up Demodulators of FM Signals"

V sb. Metody pomekhoustoychivogo priyema ChM i FM (Methods of Interference-Free FM and PM Reception--collection of works), Moscow, "Sov. radio", 1970, pp 45-56 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A147)

Translation: A strict analysis of threshold phenomena which accounts for all important parameters of real circuits, is still unfeasible. In this connection, a clear physical picture of the phenomena is extremely useful for successfully selecting the parameters of follow-up receivers of FM signals. The fundamental principles of this picture may be based on a model proposed by Rice for the threshold of a standard FM detector. The use of new concepts makes it possible to explain the "second threshold" effect, to obtain basic quantitative estimates of threshold phenomena, and finally, to detect certain properties of follow-up demodulators which contradict the concepts of the well known work of Inlow and a number of others based on it. These properties are experimentally confirmed. Resumé.

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Acc. Nr.: AP0046413

Ref. Code: UR0108

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UDC 629.195.2:621.39
JPRS 50248

TALYZIN, N. V., KANTOR, I. YA. and PAYANSKIY, YU. M.

"Economic Aspects of Increasing the Capacity of a Satellite Communication System"

Moscow, Radiotekhnika, Vol 25, No 1, Jan 70, pp 3-8

Abstract: The article deals with the economic factors of the satellite communication system and their relation to system capacity. Its purpose is to determine the dependence of the system optimal parameters and efficiency on system capacity. Various ways for increasing the system capacity are considered and their efficiency and performance are analyzed. The way of increasing the system capacity by increasing the number of high-frequency "cores" is retained for the analysis. The optimum number of "cores" is determined by the frequency deviation on the channel from an equation. At a given repeater and HF core capacity this equation makes it

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possible to establish the necessary frequency deviation and to determine the outlay for a satellite communication system, as a function of the onboard transmitter power and system capacity. Calculations of the optimal system parameters at variable system capacity was carried out, according to the algorithm presented previously by the authors, under the assumption, that every ground station is provided with one full-turn antenna and that the redistribution of channels between the ground stations is neglected. An analysis of the results shows that: 1. Outlays for one telephone channel decreases with increasing system capacity. 2. The system capacity increase leads to the reduction of optimal power of the onboard transmitter, and to an increase in the optimal antenna diameter at ground station. 3. The increase in system capacity has a small effect on its relative efficiency i.e. the average distance between the stations of an equivalent (with respect to outlays and capacity) ground station. This distance depends on the number of ground stations.

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KANTOR, L. Ya.

THE NEW "ORBITA-2" SATELLITE COMMUNICATIONS STATIONS

Article by L. Ya. Kantor, V. A. Pashchenko, and N. S. Talyzin; Moscow, Elektronovyye, Numbering, No. 5, 1973, signed to press 3 January 1973, pp 1-87

all - satellite communications

UDC 621.390.949

SO: JPRS 59751
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JPRS 59751
9 AUGUST 1973

CANAL

The Directives of the 23d Congress of the CPSU (Communist Party of the Soviet Union) provided for the transmission of programs from Central Television via artificial satellites of the Earth to distant regions of our country. This task was solved in 1967 on the eve of the 50th anniversary of the Great October Socialist Revolution, when 20 "Orbita" stations were placed in operation, i.e., a network of ground stations receiving the program from Central Television via "Orbita-1" communications satellites was created [1]. At the present time the number of "Orbita" stations has doubled. The majority of the "Orbita" stations have obtained the capability of receiving color television programs.

In certain cases the "Orbita" stations have become the source of one more Central Television program, in addition to the program obtained by cable and radio-rely communications lines. In these years, rich experience in the operation of new communications systems has been accumulated in the network "Orbita" stations, and a large number of technical problems have been worked out [6].

The Directives of the 24th Congress of the CPSU with respect to the five-year plan for the development of the national economy of the USSR in 1971-1975 provides for the performance of scientific work in space for purposes of the development of long-range telephone-telegraph communications and television. In carrying out these directives, in 1972 by the fifteenth anniversary of the formation of the Union of Soviet Socialist Republics, the development of a set of equipment for the new satellite communications stations, which have been named "Orbita-2", has been completed.

In September 1972 the first "Orbita-2" technological station was placed in operation at the city of Arkhangel'sk; on the eve of the 55th anniversary of

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Mechanical Properties

USSR

UDC 669.28'784'296:621.17:621.785.72

PAZAKOVA, N. I., MORGUNOVA, N. N., and KANTOR, M. M., Central Scientific Research Institute for Ferrous Metals, imeni A. A. Baykov

"Influence of Aging on the Temperature Dependence of the Mechanical Properties of Alloys in the System Mo-C-Cr"

Metallovedeniye i Termicheskaya Obrabotka Metallov, No 2, 1974, pp 22-28

Abstract: The study mentioned in the title was performed using two-phase Mo-C-Zr alloys containing carbon and zirconium in equal quantities of 0.25 at.% and 0.45 at.% (TSM-3 and TSM-5). The processes of aging were studied using the method of measurement of hardness and resistivity, as well as the method of transmission electron microscopy. After hardening, the main difference in the structure of the two alloys is that TSM-5 contains more sectors with large Mo₂C particles on the boundaries and particularly within the grains. After aging, beginning at 1200° C, disperse particles of the new phase begin to appear within the grains. After tempering at 1700-1800° C, the nature of the second phase segregations changes. The plate-shaped segregations are replaced by circular segregations 0.5-1.0 μ in diameter. The structural changes which occur influence the strength and hardness characteristics of the alloys. The temperature dependences of mechanical properties correlate with these structural changes. The extreme of the properties (maximum strength and minimum ductility as well as minimum resistivity) is determined by the

USSR

KAZAKOVA, N. I., et al., *Metallovedeniye i Termicheskaya Obrabotka Metallov*, No 2, 1974, pp 22-28

aging process. Dispersion hardening is manifested more sharply, the higher the quantity of carbon and zirconium in the alloy. Dispersion hardening is most strongly manifested in TSM-5 in the recrystallized state at 1400° C, and is not observed in the deformed state. Heat treatment (aging) before testing reduces or completely eliminates the dispersion hardening effect characteristics for recrystallized metal. The aging process, determining the form of the temperature dependence of mechanical properties, occurs in Mo-Zr-C and Mo-C alloys in the 900-1800° C interval, finding its maximum at 1600° C. When loads are applied, the temperature maximum of dispersion hardening drops to 1400° C.

2/2

- 40 -

Welding

USSR

UDC 621.791.011

KANTOR, M. M., CHERNYSHOVA, T. A., IGNATOV, D. V., and
SHORSHOROV, M. KH., Moscow

"Electron Microscope Study of the Structure of Welded Joints
of the Alloy TsM-2A"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 2, Mar-Apr 71,
pp 97-100

Abstract: Electronmicroscope studies were made of the structure of welded joints of TsM-2A alloy, made by cathode ray welding in various modes. It is demonstrated that processes of crystallization of the welding bath and decomposition of the solid solution in the cast zone of welded joints can be controlled by changing the thermal cycles of welding. Decomposition of the solid solution with separation of molybdenum carbide along the grain boundaries was found in the cast formation of the second phase depends on the thermal cycles of welding. Decreasing the chemical heterogeneity of the cast metal by welding in severe modes or by holding at temperatures above the phase separation point can be used to prevent formation of the second phase.

1/1

Welding

USSR

UDC 621.791.011

KANTOR, M. M., CHERNYSHOVA, T. A., IGNATOV, D. V., and
~~SHORSHOROV~~, M. KH., MOSCOW

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1/1

USSR

UDC: 621.372.852.3(088.8)

KANTOR, M. M.

"An Electrically Controlled Attenuator"

USSR Author's Certificate No 278802, filed 15 Apr 69, published 17 Nov 70
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6B194 P)

Translation: The proposed electrically controllable attenuator contains an asymmetric strip line, SHF diodes and a control circuit. To improve the phase characteristics, each of the diodes is located in the center of a shielding plate which is insulated from the housing and connected to the control circuit.

1/1

- 165 -

1/2 030

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--ORIGIN OF CARBIDE INCLUSIONS IN MOLYBDENUM AND ITS ALLOY WITH
CARBON -U-

AUTHOR--(04)-AGEYEV, N.V., IGNATOV, D.V., KANTOR, M.M., NALETOV, A.N.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(1), 89-91

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SUBJECT AREAS--MATERIALS

TOPIC TAGS--CARBIDE, MOLYBDENUM ALLOY, NONMETALLIC INCLUSION, ELECTRON
MICROSCOPY, SOLID SOLUTION, EUTECTIC, METAL CRYSTALLIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1997/1051

STEP NO--UR/0020/70/191/001/0089/0091

CIRC ACCESSION NO--AT0119918

UNCLASSIFIED

USSR

UDC 549.517.1:536.241.1:536.5.081

FOMICHEV, Ye. N., KAMTOR, P. B., KANDYBA, V. V.

"New Research on the Melting Point of Corundum as a Secondary Reference Point on the Temperature Scale"

Tr. Metrol. In-tov SSSR (Works of Metrological Institutes of the USSR), No 110 (170), 71, pp 135-141 (from Referativnyy Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, No 12, Dec 71, Abstract No 12.32.1033)

Translation: In the article are presented results of research, conducted in the USSR and abroad, on determination of the melting point of corundum as a new secondary reference point of the IPTS. On the basis of the conducted research and critical analysis of the results of the projects, the average value of the melting point of corundum was computed at 2049°C. This is the value of the melting point of corundum that is recommended as a secondary reference point of the IPTS. 3 tables. 12 references.

1/1

2/2 030

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--ATO119918

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SHAPE AND DISTRIBUTION OF CARBIDE INCLUSIONS WAS STUDIED IN MO-C ALLOYS CONTG. 2 LEVELS OF C: (1) BELOW THE SATN. LIMIT IN MO AT THE EUTECTIC POINT (0.014-0.108 WT. PERCENT) AND (2) HIGHER THAN THE EUTECTIC CONC. (0.05-0.07 WT. PERCENT). THESE ALLOYS WERE SOLIDIFIED BY TWO PROCEDURES AFTER CRYSTN. RATE; MELTING WAS DONE IN AN ELECTRON BEAM. THIN SPECIMENS WERE PREPC. AND STUDIED BY ELECTRON MICROSCOPY. THE MO-C 0.05PERCENT ALLOY, WHEN CRYSTD. ACCORDING TO (A), SHOWED COLONIES OF DISTINCT EUTECTIC ORIGIN BETWEEN CRYSTALS OF SOLID SOLNS.; WHEN CRYSTD. ACCORDING TO (B) THE ALLOY SHOWED THE MO-C EUTECTIC WITH INCLUSIONS OF COARSE, IRREGULAR HEXAGONAL PRISMS OF MO SUB2 C. THE ALLOY MO-C WITH C CONC. (0.014-0.018 WT. PERCENT), CRYSTD. ACCORDING TO (ALPHA), HAD A SOLID SOLN. STRONGLY SUPERSATD. WITH C WITHOUT ANY EUTECTIC. THE SAME ALLOY CRYSTD. ACCORDING TO PROCEDURE (B) HAD SOME EUTECTIC. BY CHANGING THE CRYSTN. CONDITIONS IT IS POSSIBLE TO CHANGE THE CHARACTER OF SOLID SOLN. DECOMPN. DURING SOLIDIFICATION.

BAIKOVA, MOSCOW, USSR. FACILITY: INST. MET. IN.

UNCLASSIFIED

USSR

UDC 536.722:536.621.082

FOMICHEV, Ye. N., KANTOR, P. B., KANDYBA, V. V.

"Procedure and Equipment for the Measurement of Substances in a Condensed Phase at High Temperatures"

Tr. Mtol. In-tov SSSR (Works of Metrological Institutes of the USSR), No 110 (170), 71, pp 108-124) (from Referativnyy Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, No 12, Dec 71, Abstract No 12.32.1194)

Translation: The measurement equipment of a high-temperature calorimetric installation for measuring the enthalpy of substances in a condensed phase in the temperature range of 500 - 3000° K is described. Consideration is given to measurement of the temperature of the sample in a high-temperature vacuum furnace, measurement of the temperature rise of the calorimeter, and calculation of the temperature correction for heat exchange, as well as the procedure for calibration of the calorimeter, by the absolute method by means of a current. An evaluation was made of the basic procedural and instrumental errors of measurement of the sample temperature, the calorimeter temperature, and the calorimeter calibration. 3 figures. 1 table. 12 references.

1/1

170

USSR

UDC 536.5:536.421.1

FOMICHEV, Ye. N., KANTOR, P. B., KANDYBA, V. V.

"A High-Temperature Installation for Reproducing the Reference Point of Corundum"

Tr. Metrol. in-tov SSSR (Works of Metrological Institutes of the USSR), No 110 (170), 1971, pp 125-134 (from Referativnyy Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, No 12, Dec 71, Abstract No 12.32.1034)

Translation: In the article is described an installation for measuring and reproducing the melting point of corundum (2049° C), as a new secondary reference point of the IPTS. The designs of the reference furnace and the measurement equipment for determining the melting point of corundum are described, as well as equipment for automatic recording of the temperature areas on the heating and cooling curves. Consideration is given to errors in measurement of the melting point of corundum by methods of optical pyrometry. 3 figures. 10 references.

1/1

USSR

UDC 624.07:534.1

KANTOR, S. L.

"On the Problem of the Correlation of Displacements and Stresses of a Reinforced Shell in the Supercritical Stage"

V sb. Probl. nadezhnosti v stroit. proyektir. (Problems of Reliability in Structural Design -- Collection of Works), Sverdlovsk, 1972, pp 76-81 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V297)

Translation: One of the versions of the nonlinear theory of hollow shells is used. It is assumed that the shell has random initial bends and that it is loaded by a random load consisting of a homogeneous field. The author assumes that under these conditions the boundary conditions have an effect only close to the contour and that the boundary conditions can be ignored in determining the probability characteristics of displacements, stresses, etc. Then by using the spectral theory of homogeneous random fields, the author finds integral equations for determining spectral densities of stresses and displacements and their mutual spectral densities. V. A. Pal'mov.

1/1

USSR

UDC 621.372.543

YOSTROVA, I.N., KANTOR, V.M.

"Some Problems Of Calculation And Planning Of Monolithic Piezoelectric Filters"

Sb. nauchn. tr. TsNII svyazi. Leningr. fil (Collection Of Scientific Works Of The Central Scientific-Research Institute Of Communication. Leningrad Branch), 1970, Issue 5, pp 148-155 (from RZh--Elektrosvyaz', No 3, March 1971, Abstract No 3.64.51)

Translation: The special features are considered of the construction of monolithic piezoelectric filters. A method of calculation in a narrow-band approximation of the equivalent electrical circuit of a filter is presented as well as the results of experiment. 5 ref. Summary.

1/1

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USSR

UDC 621.376.56

KANTOR, YE.B., MOROZOV, G.G.

"Synchronization Of Code Group In Integrated Digital Communication System"

Sb. nauchn. tr. TsNII Svyazi. Leningr.fil. (Collection Of Scientific Works Of The Central Scientific-Research Institute Of Communications. Leningrad Branch), 1970, Issue 5, pp 82-89 (from RZh--Elektrosvyaz', No 2, February 1971, Abstract No 2.64.101)

Translation: The problems are considered of the use of synchronization with respect to a code group in an integrated digital communication system (IDCS) constituted on the base of pulse code modulation and time division of channels. Switching of signals in an IDCS is accomplished in digital form. A synchronization device must assure equality of delay to a whole number of cycles during passage of signals with respect to switching devices and trunk lines. The synchronization device includes in itself generating equipment, a device for selection of information, a memory, and an analyzing device. It is possible to base the principles of operation of the device for selection of information on an analysis in terms of a definite number of tests (constant selection). With

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USSR

KANTOR, Ye. B. and MOROZOV, G. G., Sb. nauchn. tr. TeNII Svyazi. Leningr. fil. 1970, Issue 5, pp 82-89 (from RZh--Elektrosvyaz', No 2, Feb 1971, Abstract No 2.64.101)

an equal volume of selection and one and the same memory threshold, the synchronization device with a variable volume of selection assures a smaller average recovery time of synchronization and a larger value for the reliability of transmission. A comparative analysis is conducted of methods of construction of synchronization devices with respect to a code group, with constant and variable volumes of selection. A method is described for determining the parameters of a synchronization device with respect to a code group. 3 ill. 1 tab. 4 ref. V. R.

2/2

- 30 -

USSR

UDC 621.3. 087.9:621.3.0832.4

SMOLOV, VLADIMIR BORISOVICH; KANTOR, YEVGENIY L'VOVICH

"Bridge Computing Devices"

Mostovyye vychislitel'nyye ustroystva (cf English above), Leningrad, "Energiya," 1971. 176pp 24 ref. ill. 71 k.

Abstract: In the book the basic theory, elements of design, and examples of practical application are considered for bridge computing devices (BCD) which fulfill basic mathematical operations with an error on the order of a ten hundredth portion of a percent. The distinctive features of the BCD are simplicity of structure, processing of information of any form (discrete, analog, combined) and nature (angle of rotation, linear displacement, temperature, pressure, time interval, electrical voltage, etc.) without transformation, and also the possibility of using an optimum piecewise-exponential approximation. Use of BCD in automated control system makes it possible to decrease considerably the amount of equipment and to relieve the programs of an electronic computer assuring to them a significant improvement of the reliability-economical characteristics. The material of the book is a generalization of scientific investigations made by the authors at the Department [kafedra] of Computing Techniques of the Leningrad Electrotechnical Institute imeni V.I.Ul'yanov (Lenin). The book is intended for specialists in the field of computing and information devices.

1/5

- 15 -

USSR

SMOLOV, VLADIMIR BORISOVICH and KANTOR, YEVGENIY L'VOVICH, Mostovyye Vychislitel'nyye ustroystva, Leningrad, "Energiya," 1971. 176 pp, 24 ref. ill. 71 k.

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2/5

USSR

SMOLOV, VLADIMIR BORISOVICH and KANTOR, YEVGENIY L'VOVICH, Mostovyye Vychislitel'nyye ustroystva, Leningrad, "Energiya," 1971. 176 pp, 24 ref. ill. 71 k.

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USSR

SMOLOV, VLADIMIR BORISOVICH and KANTOR, YEVGENIY L'VOVICH, Mostovyye Vychislitel'nyye ustroystva, Leningrad, "Energiya," 1971, 176 pp, 24 ref. ill. 71 k.

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* Misprinted as "156" in Table of Contents
4/5

USSR

SMOLOV, VLADIMIR BORISOVICH and KANTOR, YEVGENIY L'VOVICH, Mostovyye Vychislitel'nyye ustroystva, Leningrad, "Energiya," 1971. 176 pp, 24 ref. ill. 71 k.

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KANTOROVICH, B. V.

STUDY OF ELECTRICAL CONDUCTIVITY OF A STREAM OF
HOT POWDERED FUEL

Article by G. S. Golovina, B. V. Kantorovich, the late R. N. Pulin, 44-7602
Yu. A. Ponomarev and K. I. Cheredkovskii, Moscow, Novye issledovaniya
topikal'noy teorii goreniya, Novosibirsk, 1972, pp. 51-55.

Received 10/1/73
JPRS 59752
9 August 1973

(4)

As was demonstrated in reference [1], a change in the electrical conductivity of a burning mixture of gaseous and solid natural fuel along the flow is extreme in nature, with a maximum of conductivity in the zone of intensive transformation of the fuel. These data agree with the results of investigations [2], in which their increased values of conductivity in the combustion zone were obtained in comparison with the products of combustion.

With reference to the process of combustion of natural solid fuel, which has undergone a whole complex of thermochemical transformations, it is not possible to have our work on unambiguous explanations of the presence of super-equilibrium concentrations of charged particles.

Considering the very complex chemical structure of coal, which in the process of combustion undergoes deep thermal chemical transformations both in its organic and in its mineral components, the presence of charged particles in the reacting flow may be explained by the change in many properties of the reacting system.

An increase in the concentration of charged particles in a flow of burning fuel is proper to processes of thermal decomposition of the organic part of the fuel, the combustion of the liberated volatile substances and the solid residue, the transformation from the surface of the solid particles of the fuel itself and the carbon black that is formed, thermal transformation of the mineral part of the fuel, vaporization and ionization of certain substances, etc.

- 1 -

[1 - USSR - R]

USSR

UDC 536.46:662.612.32

NECHAYEV, V. N., KANTOROVICH, B. V.

"Effect of Interpore Reaction on the Interaction of Carbon Dioxide With Graphite"

V sb. Novyye metody szhiganiya topliva i vopr. teorii goreniya (New Methods of Fuel Combustion and Problems in Combustion Theory -- Collection of Works), Moscow, "Nauka", 1972, pp 78-83 (from RZh-50. Yadernyye reaktory, No 11, Nov 72, Abstract No 11.50.139)

Translation: Experiments were conducted to show the depth of penetration of the reaction of CO₂ with graphite. The studies were conducted on graphite channels of different thickness: 4.0, 2.0, and 0.7 mm at T = 1400-2400°K. It was established that in a channel with wall thickness δ equal to 0.7 mm the reaction occurs in the temperature interval 1400-1500° in order of magnitude close to zero with activation energy E = 80±5 kcal/mole. 2 ill., 2 tables, 6 ref.

1/1

USSR

UDC 662.61.001.57

KANTOROVICH, B. V., IVANOV, Yu. V., MAKSIMENKO, Yu. F.

"Modeling Pulsations of an Ideal Mixing Reactor"

V sb. Dinamika teplov. protsessov v energetike i tekhnol. (The Dynamics of Thermal Processes in Power Engineering and Technology -- Collection of Works), Kiev, "Nauk. dumka", 1971, pp 78-85 (from RZh-Teploenergetika, No 7, Jul 72, Abstract No 7T49)

Translation: The combustion process in the stoichiometric regime generates pulsations, the frequency of which is determined by the heat-air relationship. In the theory of vibration combustion particular attention is given to the properties of the acoustical system and only the role of a perturbing force and energy source is given to combustion itself. Pulsation mechanisms exist, however, associated only with the combustion processes themselves. Vibrational processes were modeled on the MN-7 computer. It was shown that pulsations of the relaxation type arise in an ideal mixing reactor. The dependence of the frequency of the relaxation vibrations on the heat flow and on oxygen was investigated. The studies verified that one can judge the shape of the pulsation spectrum on the basis of the heat-air relationship. 3 ill., 6 ref. R. M. Shchurin.

1/1

- 71 -

KANTOROVICH, I. I.

RAN / 1 R. 1160 / 5. 21 R. 11. 12

Assuming the destruction process is a thermal one at the absorption centers (microimperfections), a formula is presented for determining the index of absorption of the microimperfections together with an example of its application.

Kantorovich, I. I. Frequency dependence of optical breakdown in gases. ZhPS, v. 16, no. 4, 1972, 605-610.

An analysis is given of the contribution of atomic excitation processes, particularly avalanche ionization, to optical breakdown in gases. The study is generally limited to the area around breakdown threshold, $\sim 10^6$ v/cm, with argon and xenon used as hypothetical media. Expressions are derived for the probability $f(\omega)$ of continuous ionization of Ar and Xe, and these results are plotted in Fig. 1.

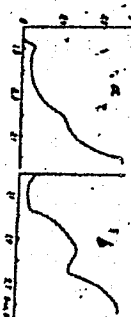


Fig. 1. Frequency dependence of ionization probability for Ar (a) and Xe (b). ω = optical frequency.

1/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ROENTGENOTHERAPY OF POSTOPERATIVE ANASTOMOSITIS -U-
AUTHOR-(02)-KANTOROVICH, I.Z., KARIBOV, YU.I.
COUNTRY OF INFO--USSR
SOURCE--KHIRURGIYA, 1970, NR 6, PP 43-46
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--RADIOTHERAPY, SURGERY, ARTERIAL ANASTOMOSIS, ABDOMEN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3002/1768 STEP NO--UR/0531/70/000/006/0043/0046
CIRC ACCESSION NO--AP0129136
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129136

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER PRESENTS THE TECHNIQUE AND RESULTS OF ROENTGENOTHERAPY OF ACUTE POSTOPERATIVE ANASTOMOSITIS IN 34 PATIENTS OF WHOM IN 28 CASES A GOOD RESULT WAS ACHIEVED. AFTER THE FIRST SEANCES OF IRRADIATION THERE OCCURRED A CESSATION OF VOMITING, THE PAIN IN THE ABDOMINAL CAVITY DECREASED AND THE GENERAL STATE IMPROVED. INFILTRATES IN THE ABDOMINAL WALL REDUCED IN SIZE AND GRADUALLY DISAPPEARED. RESTORATION OF THE ANASTOMOTIC PATENCY WAS NOTED ROENTGENOLOGICALLY. SINGLE LOCAL DOSES OF IRRADIATION DROPPED DOWN TO 7-20 RAD, THE TOTAL DOSES DOWN TO 100 RAD. REDUCTION OF THE IRRADIATION FIELDS, SINGLE AND TOTAL DOSES OF IRRADIATION, ALTERATIONS IN THE RHYTHM OF IRRADIATION (EVERY ALTERNATING DAY) SIGNIFICANTLY SHORTENED THE TERM OF TREATMENT AND THE TOTAL RADIATION EXPOSURE OF THE PATIENTS ORGANISM. X RAY THERAPY IS AN EFFECTIVE MEANS OF TREATING POSTOPERATIVE ANASTOMOSITIS. FACILITY: RENTGENOVSKOYE OTDELENYE GURODSKOY KLINICHESKOY OBL'NITSY NO. 1 IMENI N. I. PIROGOVA. FACILITY: RENTGENOTERANEVTICHESKIY OTDEL MOSKOVSKOGO NI RENTGENO-RADIOLOGICHESKOGO INSTITUTA.

UNCLASSIFIED

USSR

UDC 51:330.115

KANTOROVICH, L. V., Academician, and ZhiYaN OV, V. I., Institute of the Management of the National Economy, Moscow

"A Single-Product, Dynamic Model of the Economy, Considering the Change in Fund Structure Occurring with Technical Progress"

Moscow, Doklady Akademii Nauk SSSR, Vol 211, No 6, 21 Aug 73, pp 1280-1283

Abstract: The model is constructed in stages: 1) a basic expression for production in terms of available resources and labor; 2) a factor for technical progress, such that the production value of a given amount of capital expenditure is an exponential function of the time at which the expenditure is made; 3) a factor for additional investment (capital and labor) made available by the recovery of resources from obsolete activities; 4) a fund transfer lag function, expressing the necessary delay for the construction of capital equipment and the transfer of labor to new activities.

The factor to be optimized is chosen as $\frac{dP(p)}{dt}$, where P is pure production or national income and t is time. The model is then expressed by the following four equations:

1/3

USSR

KAMICHOVICH, L. V., and ZHIIYANOV, V. I., Doklady Akademii Nauk SSSR, Vol 211, No 6, 21 Aug 73, pp 1280-1283

$$P(t) = \int_{m(t)}^t e^{\delta(\tau-L)} U[\lambda(\tau), 1] \phi(\tau) d\tau$$

$$\phi(t) = T'(t) \phi[m(t)] m'(t)$$

$$\lambda(t) \phi(t) = \lambda(t-L)$$

$$\phi(t) U[\lambda(t), 1] - \lambda(t-L) U'[\lambda(t), 1] - e^{\delta[m(t)-t]} \phi(t) U[\lambda[m(t)], 1] = 0;$$

where $e^{\delta(\tau-L)}$ is the technological progress increment (L is the lag factor);

2/3

USSR

KANTOROVICH, L. V. and ZHIYANOV, V. I., Doklady Akademii Nauk SSSR, Vol 211, No 6, 21 Aug 73, pp 1280-1283

U is the production function, $\phi(\tau)d\tau$ is the incremental labor demand,
 $\lambda(\tau)\phi(\tau)d\tau$ is the incremental created resources,

$T'(t)$ is the increment in labor resources,

$m(t)$ is a function determining a moment earlier than t such that all resources committed prior to t are liberated at $m(t)$,

$\chi(t)$ is the capital investment.

Considering a small increment of time, the model yields a criterion function for capital investment efficiency. A solution of the equations to yield a function such that $U(x,y)$ is a Cobb-Douglas function is given in the article.

USSR

KANTOROVICH, L. V., Academician, Chief Mathematician of the "Metall" Automated Control System

"Software for the 'Metall' Automated Control System"

Moscow, Pribery i Sistemy Upravleniya, No 12, Dec 72, pp 8-10

Abstract: The author outlines the set of algorithms and models which comprise the software for the "Metall" system for automated planning and management of metal supply in the Soviet Union. The problems discussed include the allocation and updating of orders, optimization of transport, maximum utilization of mills, and distribution of finished goods. The procedures used in attacking these problems are presented in general outline. The problem of acquisition of initial data is considered. An appendix gives a brief description of three basic mathematical models for charging of rolling mills including initial data and unknown quantities to be determined.

1/1

USSR

UDC 911.3.613.11(98)

KANTOROVICH, M. M.

"Human Thermoregulation During the Acclimatization Process in Transpolar Regions"

V sb. Akklimatiz. i kravev. patol. cheloveka na Severe (Acclimatization and Regional Pathology of Man in the Far North--collection of works), Arkhangel'sk, 1970, pp 66-68 (from RZh-36. Meditsinskaya Geografiya, No 1, Jan 71, Abstract No 1.36.48 by T. Koretskaya)

Translation: Workers in polar regions have a significantly higher basal metabolism, which tends to be even higher in the autumn than in the spring. As the worker continues to live in the polar region, the basal metabolism tends to decrease, as do seasonal fluctuations. During acclimatization, blood sugar stabilizes at a higher new level, which indicates a change in the state of carbohydrate metabolism and an increase in oxidation processes. Studies of heat flow and skin temperature after cold tests showed that, with increase in time spent in polar regions, these indicators decrease. The key factor in human adaptation to cold is chemical thermo-regulation -- an increase in heat production.

1/1

USSR

UDC 612.017.2(470.1)

KANTOROVICH, M. M., Candidate of Medical Sciences

"Change in General Immunobiological Reactivity During Arctic Acclimatization"

Moscow, Voyenno-Meditsinskiy Zhurnal, No 11, 1970, pp 44-46

Abstract: The dynamics of the phagocytic activity of leukocytes was studied in 154 persons in relation to the length of time they stayed in the Arctic. Phagocytosis was evaluated on the basis of the phagocytic number, general phagocytic capacity of the blood, phagocytic index, and skin test upon the arrival of individuals in the north and in the spring and fall of the first, second, and third years thereafter. A distinct decrease in resistance was noted during the first year, especially in the spring following the first winter in the Arctic. Resistance increased somewhat in the fall, but was well below the level found upon arrival. As time went on, however, resistance increased appreciably, but phagocytic activity was generally much higher in the fall than in the spring. During the third year the seasonal fluctuations tended to level out.

1/1

USSR

UDC 616+614(98)(049.3)

KANTOROVICH, M. M., Candidate of Medical Sciences, Leningrad (Reviewer)

Patologiya cheloveka i profilaktika zabolevaniy na Severe (Human Pathology and Prevention of Disease in the North), by G. M. Danishevskiy, Moscow, "Meditsina", 412 pp

Moscow, Klinicheskaya Meditsina, Vol 48, No 9, Sep 70, pp 152-154

Abstract: This monograph is based on the author's theory of the acclimatization process and the pathogenesis of regional pathology in the Northern USSR. It summarizes data obtained by Soviet and foreign investigators as well as the results of the author's own studies. The book is divided into an introduction, which outlines the history of the subject, and five parts. Part 1 describes the natural phenomena and climate of the Soviet North from the biomedical point of view. Part 2 deals with the aboriginal populations in the Far North and the social and biological metamorphoses they have undergone since the advent of the Soviet regime. Parts 3 and 4 are concerned with questions relating to the acclimatization of the immigrant population and the characteristics of regional pathology. The author believes that local climatic conditions are only secondary factors in the etiology

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KANTOROVICH, M. M., Klinicheskaya Meditsina, Vol 48, No 9, Sep 70, pp 152-154

and pathogenesis of such widespread diseases as rheumatism, tuberculosis, hypovitaminoses, and cardiovascular disorders. Part 5 indicates the possibilities for eliminating or mitigating adverse climatic effects that may result in a breakdown of one of the adaptation mechanisms. The book is regarded as a major contribution to the field.

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UDC 911.3.616.988.26(575.4)

KANTOROVICH, R. A., BYKOVSKIY, A. F., KIRILLOVA, F. M., and SOKOLOVA, N. M.

"Materials of Epidemiological, Virological, and Electron-Microscope Study of Hemorrhagic Fever Foci in Tadzhik SSR"

V sb. "Virusn. bolezni s.-kh. zhivotnykh. Ch. 2 (Virus Diseases of Farm Animals. Part 2), Moscow, 1970, pp 216-217 (from RZh-Meditsinskaya Geografiya, No 4, Apr 71, Abstract No 4.36.66)

Translation: The study revealed a relationship between Central Asian hemorrhagic fever and the foothill and low mountain type of geographic relief. Primary disease was chiefly observed in men aged 20-40 years, whose jobs required their being outdoors for prolonged periods in fields, pastures, etc. Results are presented for virological, cytological and electron microscope study of the agent.

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UDC 51

KANTOROVICH, V. L.

"Structure of Depreciation Payments in Certain Models of Using a Machine Fleet"

Sb. tr. In-t mat. Sib. otd. AN SSSR (Collected Works of the Mathematics Institute of the Siberian Division of the USSR Academy of Sciences), 1971, vyp. 4 (21), pp 7-20 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V525)

Translation: A study was made of the models of replacing equipment with a constant load on the machine fleet. The structure of the depreciation allowances is analyzed in cases of deterministic and stochastic wear which are constant and depend on the age of the machine and the maintenance expenditures. At the end of the article, a study is made of a model of replacing "old" machines in the fleet by "better ones."

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KANTOROVICH, V. L.

UDC 530.63.002.56
GEOGRAPHICAL LIMITATIONS OF AN APPROXIMATE COMPENSATION OF
AIRPLANE MAGNETIC FIELDS

[Article by V. L. Kantorovich; Leningrad, Geofizicheskaya
Apparatura, Moscow, No 12, 1971, pp 44-46]

With the application of approximate compensation of
the interference by the magnetic fields of the carrier air-
plane to the magnetometer T, the interference and the com-
pensation fields are described by the expressions (4) and
(6).¹

The compensation is achieved if²

$$Z_{ps} = Z_p - 2I Y_p \sin I; \quad (1)$$

$$X_{ps} = X_p - Y_p; \quad (2)$$

It follows from expression (1) that the component of the
inductive field of the airplane's ferromagnetic masses
magnetization is compensated by the compensator constant
field component. It is obvious that such a compensation
cannot be stable during substantial displacements of the
airplane because the magnitude of the inductance field
varies due to variation of the magnitude and direction of
the Earth's magnetic field (BMF). For this reason there
appears a problem of determining the extent of the region
in which approximate compensation is maintained with the
required accuracy.

With the condition of compensation error equalling
zero, the equation of compensation in the initial region
has the form

$$I_{ps} - I_{ps} = 0. \quad (3)$$

SPRS 56099 - 30 -
25 May 72

KANTOROVICH, Ye. N.

Medicine / Virology

SO: JPRS 53872

02 JUNE 71

UDC: 576.858-001.5(47)"1969-1970"

PRINCIPAL RESULTS OF SCIENTIFIC RESEARCH IN 1969-1970 ON A PROBLEM OF NATIONAL IMPORTANCE: GENERAL VIROLOGY

Medicine / Virology

[Article by O.P. Retemov, A.I. Denilov, Ye. N. Kantorovich, Moscow; Moscow, Vostok Akademi Meditsinskikh Nauk SSSR, Russian, No 6, April 1971, pp B1-86]

In our country 22 scientific institutions are involved in development of the problem of "general virology." In the survey we discuss a number of works performed in 1969 and in the first quarter of 1970.

Greatest advances were made in the study of synthesis of viral particles and components thereof. Work in this field was done on a high, modern methodological level and resulted in a series of acquired data. For example, at the Institute of Virology, USSR MS (Academy of Medical Sciences) replicative forms of RNA were discovered and investigated, which are formed upon reproduction of three viruses: Sendai, Newcastle disease, and Venezuelan encephalomyelitis. These data constitute a substantial supplement to the hypothesis of universality of the process of formation of double-stranded and multistranded intermediate forms of RNA upon replication of animal virus RNA.

There were some unique investigations dealing with the coding function of viral genetic material in Sendai paromyxovirus. It was demonstrated that viral ribonucleoprotein penetrates into the cell and in the cytoplasm it associates with polyosomes and codes virus-specific proteins. These data were confirmed in experiments in an acellular system, in which a study was made of the coding properties of viral RNA and RNP. The results obtained disclose wide possibilities for solving a series of basic problems. In particular the problem of whether this phenomenon extends to other viruses, does the protein of ribonucleoprotein play a specific role in realization of information deposited in nucleic acid, and others.

Some interesting work was done with regard to investigation of virus-induced synthesis in the mitochondrial-mitochondrial fraction in an extracellular system (model: VEE arbovirus). It was demonstrated that this fraction, obtained from infected cells, which has a high level of RNA polymerase activity synthesizes in vitro RNA of both the cellular and viral type.

USSR

UDC 576.858.75.097.22:615.332

KANTOROVICH, YE. N., CHEBURKINA, N. V., and PETERSON, G. P., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, Moscow

"Partial Incorporation of Influenza Virus RNA into an RNA-ase-Resistant Form, and the Effect of Actinomycin D on This Process"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 72, pp 405-408

Abstract: Chick embryo cells were infected with influenza A virus, strain WSN and then labeled with uridine- H^3 so that the fate of virus RNA could be traced and the effect of actinomycin D on this fate could be revealed. It was found that about 20% of the parental RNA becomes incorporated into an RNA-ase-resistant form 4-6 hours after infection. Actinomycin D had no effect on adsorption and elution of the virus, but it completely inhibited transition of parental RNA into the RNA-ase-resistant form. Apparently the drug does not degrade virus RNA. Instead it appears to inhibit either the formation of RNA strands complementary to the parental template, or the combination of such strands into the RNA-ase-resistant form.

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USSR

UDC: 8.74

INOYATOV, A. I., ~~KANTSELI, A. V.~~ PLESHAKOV, M. D.

"An Adaptive Recognition Algorithm Utilizing Statistical Resolving Rules"

V sb. Vopr. kibernetiki (Problems of Cybernetics--collection of works),
vyp. 45, Tashkent, 1971, pp 78-81 (from RZh-Kibernetika, No 5, May 72,
Abstract No 5V572)

[No abstract]

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UDC 512.25/.26+519.3:330.115

SALIKHOV, Z. M., PAYZIYEV, E., BURKOV, V. N., KANTSEL'SON, M. B.

"Combined Algorithm for Solution of the Transport Problem"

Vopr. Kibernet. i Vychisl. Mat. [Problems of Cybernetics and Computer Mathematics
-- Collection of Works], No 40, Tashkent, 1970, pp 23-29, (Translated from
Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V507).

NO ABSTRACT.

USSR

SALMIN, I. D., KANTSYREVA, T. A.

"Use of Method of Branches and Bounds for Solution of Problems in Linear Integer Programming with Boolean Variables"

Ekon.-mat. Metody i Programmir. Plan.-ekon. Zadach. [Mathematical Economic Methods and Programming of Planning and Economic Problems -- Collection of Works], Moscow, 1972, pp 224-227 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V713 by Yu. Finkel'shteyn).

Translation: The multivariate knapsack problem is studied:

$$F = \sum_{j=1}^n c_j x_j \rightarrow \max, \quad (1)$$

$$\sum_{j=1}^n a_{ij} x_j \leq b_i, \quad i=1, 2, \dots, m, \quad (2)$$

$$x_j = 0 \text{ or } 1, \quad j=1, 2, \dots, n. \quad (3)$$

Here all $a_{ij} \geq 0$. An algorithm of branches and bounds is suggested for its solution, distinguished by its simple (though not always effective) 1/2

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SALMIN, I. D., KANTSYREVA, T. A., Ekon.-mat. Metody i Programmir. Plan.-
ekon. Zadach., Moscow, 1972, pp 224-227.

method of calculating the balance. The statement of the authors of the
possibility of reducing problems such as (1)-(3) without the condition
 $a_{ij} \geq 0$ to a problem of type (1)-(3) with the condition $a_{ij} \geq 0$ is erro-
neous (since it does not consider the appearance of conditions such as
 $x_j + x_j' = 1$).

2/2

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1/2 014 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ANALYTIC REPRESENTATION OF THE MAGNETIC FIELD OF A SECTOR CYCLOTRON
-U-
AUTHOR--KANUNNIKOV, V.N. *K*
COUNTRY OF INFO--USSR
SOURCE--CERN-TRANS-69-20 FROM PREPRINT NO. 21. 11P. DEP. CFSTI
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CIRC ACCESSION NO--AM0101145

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE APPROXIMATION OF THE
PROBLEM TO TWO DIMENSIONS AND AN INFINITELY LARGE MAGNETIC PERMEABILITY,
ONE OBTAINS ANALYTIC EXPRESSIONS FOR THE FIELD OF A RADIAL MAGNET IN
SECTORS COMPOSED OF SEAPRATE BLOCKS. THE RESULTS ARE IN GOOD AGREEMENT
WITH EXPERIMENTAL RESULTS. FACILITY: AKADEMIYA NAUK SSSR,
MOSCOW. INSTITUT FIZIKI.

USSR

UDC: 621.317.335

BARTASHEVSKIY, Ye. L., KANUNNIKOV, V. P., SKUBITSKIY, V. N.

"Use of Dielectric Resonators With Directional Coupling Elements to Measure Relative Permittivity"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 1 (Reports of the All-Union Scientific And Technical Conference on Radio Engineering Measurements. Vol. 1), Novosibirsk, 1970, pp 75-76 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A354)

Translation: In view of the difficulties which arise when dielectric resonators in the standing-wave or traveling-wave modes are used to measure complex permittivity, new modifications of standing-wave and traveling-wave dielectric resonators are proposed with directional couplers as their coupling elements. Both resonators are based on a circular dielectric waveguide with HE_{11} wave; the standing-wave dielectric resonator is tuned by moving a reflector, while the traveling-wave unit is tuned by displacement of the waveguide. It is noted that the traveling-wave dielectric resonator has a higher Q than the standing-wave unit, which makes it preferable for use. Two illustrations, bibliography of five titles. N. S.

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